REMARKS

Claims 1-16 are presently pending in the application.

Claim 1 has been amended to recite that the membrane is directly pressed onto an internal surface of the leather, which is supported in the specification at least in paragraph [0006] and that the glue pattern provides adhesion between the leather and the membrane, which is supported at least in paragraph [0012]. Claim 15 is supported at least in paragraph [0012], and claim 16 is supported at least in paragraph [0006] and in the drawing. No new matter has been added by these amendments.

The Examiner has rejected claims 1-3, 5-8 and 11-14 under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 4,925,732 of Driskill et al. ("Driskill"). Claims 4, 9, and 10 have also been rejected under 35 U.S.C. § 103(a) as being unpatentable over Driskill. Applicants respectfully traverse these rejections and the arguments in support thereof as follows, and respectfully request reconsideration and withdrawal of the rejections.

Rejections Under §§ 102(a) and 103(a) Based on Driskill

Regarding claims 1-3, 5-8, and 11-14, the Examiner argues that Driskill teaches a laminate comprising flexible moisture permeable adherends and a moisture permeable adhesive. The laminate allegedly has good moisture transmitting characteristics with good bond strength. The Examiner argues that in Example 4, Driskill teaches that a cowhide leather and a waterproof material (made by adhering a membrane to a knit fabric) were made into a laminate as follows. Adhesive D was applied to a 7.5 cm square of each material in a dotted pattern and allowed to dry for two hours. The two coated faces were then placed together and heat was applied with a household iron to the fabric side of the laminate for about 20 minutes. The thickness of the layer was allegedly 25 microns. The Examiner further argues that Driskill employs a one-component, hydrophilic, block polyurethane. Finally, regarding claim 12, the Examiner contends that a shoe would inherently be made with two or more pieces of leather sewed together. Based on these teachings, the Examiner concludes that Driskill anticipates the present claims.

Regarding claims 4, 9, and 10, the Examiner acknowledges that Driskill does not teach the claimed distance between the glue dots. However, the Examiner argues that the leather use or application would influence the amount of glue and the distance between the dots, and

thus concludes that it would have been obvious to one having ordinary skill in the art at the time of the invention to change the distance between the glue dots, which would correspond to the amount, since this would only be discovering an optimum value of a result effective variable and would require only routine skill in the art. Applicants respectfully traverse these rejections as follows.

distance not in independent claim

The present invention is directed to a process for waterproofing leather in which a semi-permeable membrane is directly pressed onto a surface of the leather; a discontinuous glue pattern on the membrane provides the adhesion to the leather. Applicants have discovered that this method eliminates the need for a lining used in combination with the semi-permeable membrane. Furthermore, the glue pattern provides adhesion to the leather while also, because of its discontinuous nature, plugging only a portion of the leather pores and allowing water vapor to pass through. The moisture permeable leather according to the present invention is cheaper and easier to manufacture than that of the prior art since the method involves directly laminating the semi-permeable membrane onto the inner side of the leather using only one pattern of adhesive and with no lining therebetween. Further, the adhesives used in the claimed method are not necessarily hydrophilic (which tend to be expensive and have a relatively low adhesive coefficient), but can be non-hydrophilic, i.e., cheap and strong. Since the adhesive is applied in a dotted pattern, transpiration is accomplished through the portion of the membrane not covered by the adhesive dots.

In contrast with the present invention, Driskill teaches a moisture permeable laminate comprising leather and a waterproof fabric material which is a semi-permeable membrane adhered to a knit fabric (col. 12, lines 58-59). Driskill does not teach or suggest that the knit fabric may be eliminated from the laminate, or that there may be direct contact between the leather and the semi-permeable membrane as claimed. Furthermore, it is noted that in Example 4 of Driskill, the membrane is coupled with a fabric and there is no explanation whether the adhesive was applied on the side of waterproof fabric material provided with the membrane or on the opposite side. Therefore, Driskill does not anticipate or suggest a process or a laminate in which the membrane is directly applied onto the leather by a single pattern of adhesive.

Applicants acknowledge that in Example 4, Driskill teaches that the adhesive is hydrophilic (breathable or moisture permeable) and is applied in a dotted pattern on both the leather side and the fabric side of the laminate. However, the Examiner does not recognize that there is an inherent technical problem in the process of Driskill which makes it inoperable: the leather and the fabric do not adhere to each other. Driskill even admits at col.13, lines 3-5 that, "In bond strength testing, the laminate showed cohesive adherend failure in both the dry and the wet peel tests" (emphasis added).

Further, Driskill teaches throughout the specification that in order to obtain a sufficient bond between the leather and the waterproof fabric, the adhesive must be hydrophilic and applied "in a continuous film of at least 25 micron thickness" i.e., not in a discontinuous (e.g., dotted) pattern, as claimed (see, for example, col. 4, lines 23-25). It is only in Example 4 of Driskill in which a dotted pattern is used, and bonding between the leather and the waterproof material was not observed. Accordingly, Driskill teaches away from the claimed dot pattern of adhesive. The adhesive coefficient of the particular hydrophilic adhesive described by Driskill is apparently so low that even two dotted layers of this adhesive were not sufficient for bonding the laminate, as is demonstrated by the failure described in Example 4 and the success of the continuous adhesive layers in the other examples.

Teach away

According to the present invention, only one single pattern of adhesive need be applied to the semi-permeable membrane; no adhesive need be applied to the surface of the leather. In contrast, as previously noted, Driskill teaches in Example 4 that the adhesive was applied in a dotted pattern on each side of the materials to be joined. Therefore, one skilled in the art would understand that the adhesive of Driskill must necessarily be hydrophilic. If not, since it is technically impossible to perfectly arrange the dots of one layer onto the dots of a second layer, two overlapping layers of non-hydrophilic adhesive dots would lead to non-transpiration or at least to reduced transpiration of the laminate. In contrast, as previously explained, the adhesives used in the present invention are not required to be hydrophilic.

Finally, Applicants respectfully traverse the Examiner's conclusion that the size and density of the adhesive dots are obvious parameters. In contrast, these are critical parameters since their selection influences both the bond strength and the transpiration of the laminate. In fact, in the sole example of Driskill which discloses a dotted pattern, Driskill was

not able to determine appropriate dot parameters and thus failed to achieve the desired results, i.e., bonding the leather with the waterproof fabric.

For all of these reasons, Applicants respectfully submit that Driskill does not anticipate or render obvious the pending claims, and reconsideration and withdrawal of the §§ 102(a) and 103(a) rejections are respectfully requested.

Based on the preceding Amendments and Remarks, it is respectfully submitted that the pending claims are patentably distinct over the prior art of record and in condition for allowance. A Notice of Allowance is respectfully requested.

Respectfully submitted,

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